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### Half-metals - a new class of materials

The term 'half-metals' was coined by R. A. de Groot et al. in 1983. From theoretical reasoning, it was conjectured that in some Heusler alloys there could be conduction electrons of one spin direction only, a situation of interest with respect of basic physics and of application potential in future spintronics. Meanwhile, both respects are experimentally well underpinned and more examples besides Heusler alloys were found. Regarding terminology, half-metals have little in common with semi-metals known since nearly a century. (This has implications for German names for both classes.) The concept of half-metals and its implications will be analyzed, and recent computational results for series of Heusler alloys will be presented.



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